

**COMMENTS OF THE DELTA TRIBUTARY AGENCIES
COMMITTEE REGARDING THE KEY ISSUES IDENTIFIED FOR
THE JUNE 14, 1994 WORKSHOP OF THE STATE WATER
RESOURCES CONTROL BOARD**

The Delta Tributary Agencies Committee (DTAC) submits these comments in response to the Notice of Public Workshop to review and revise water quality standards for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary that was issued on May 13, 1994 by the State Water Resources Control Board.

DTAC is composed of 30 water purveying agencies located upstream of the Sacramento-San Joaquin Delta on both the Sacramento and San Joaquin Rivers. Attachment 1 is a list of the DTAC member agencies.

DTAC takes this opportunity to reaffirm its "Statement of Principles for Bay-Delta Proceedings" adopted in Sacramento, California of June 9, 1991 (WRINT-DTAC 3) and presented to you on June 26, 1992 (WRINT-DTAC 1). Four of the principles adopted by DTAC which are applicable to these workshops are:

- 1) The State Board should recognize and follow area of origin and watershed protection principles.
- 2) The State Board should recognize the unique impacts of Delta water exports and require those exporters to mitigate their adverse environmental impacts.
- 3) Consistent with Principles 1 and 2, the State Board must rely on the priority system to allocate the responsibility for Bay-Delta water quality objectives and flow requirements.
- 4) Municipal and domestic uses should receive no special preference in the allocation of responsibility to maintain Bay-Delta water quality objectives and flow requirements.

What factors, excluding diversions, contribute to the decline of fish and wildlife resources in the Bay-Delta Estuary?

The Delta is not static—it has always been in a constant state of change driven by tides, winds, precipitation, and the influences of man. In this century, the state's population has gone from 1.5 million in 1900 to 20 million in 1970 to over 30 million today. This population growth has put tremendous pressures on all of the state's resources, including the Delta. In addition to population growth, other factors have directly influenced the fish and wildlife resources of the Delta. These factors include the following:

- ◆ Commercial and sport fishing
- ◆ Construction and maintenance of flood control levees upstream of the Delta
- ◆ Construction and operation of the Central Valley Project (CVP) and State Water Project (SWP) storage reservoirs
- ◆ Construction of the Sacramento and San Joaquin Deep Water Ship Channels
- ◆ Delta reclamation, dredging, and levee construction
- ◆ Droughts
- ◆ Flood control projects in the Bay-Delta watershed
- ◆ Floods
- ◆ Forest practices in the upstream watersheds
- ◆ Hydraulic mining
- ◆ Increased population and recreational pressures in the Delta
- ◆ Industrial and municipal waste discharge to the Bay-Delta and the upstream waters
- ◆ Operation of the CVP Tracy and the SWP Banks Delta pumping plants that have entrained fish and altered the natural flow patterns of the Delta
- ◆ Reclamation of swamp and overflow lands upstream of the Delta
- ◆ Removal of riparian forests along the Sacramento and San Joaquin Rivers
- ◆ Sacramento and San Joaquin River flood control projects
- ◆ Upstream diversions to use and storage
- ◆ Urban and agricultural runoff
- ◆ Wholesale alteration of the Delta's species composition through the introduction of striped bass and other species.

Many of these factors substantially pre-dated the recent declines in Bay-Delta fisheries and therefore were not direct causes of the declines. On the other hand, CVP and SWP pumping, increased commercial fishing, introduced species and higher levels of pollution are more recent developments that coincide with these fishery declines. The State Board therefore should focus its efforts on actions that will reverse the adverse effects of these recent developments.

Moreover, because so many factors have influenced, and continue to influence, Bay-Delta resources, it is evident that simply increasing Delta outflow will not solve all the Delta's problems. Simple solutions won't solve complex

problems—throwing more water at the “problem” won’t restore the Delta’s aquatic resources to the levels advocated by some Bay-Delta participants.

Some factors, such as water pollution, are directly within the State Board’s authority to control. Other factors affecting the Bay-Delta resources, such as commercial and recreational fishing, cannot be directly addressed by the State Board. While the State Board cannot directly regulate fishing, it should recognize that such regulatory measures have a direct impact on salmon, striped bass, and other species. The State Board can and should take an active role in advising and consulting with the appropriate regulatory agencies to implement a broad-based and coordinated program of resource protection. To do otherwise would render the State Board’s other Bay-Delta actions meaningless.

Factors Affecting Chinook Salmon

Species such as Chinook salmon pass through the Bay-Delta Estuary on their way to and from upstream spawning and rearing areas. Throughout their life cycles they encounter numerous factors which influence the abundance of the salmon fishery. These factors include the quality of spawning and rearing habitat, food supply, predators, constraints to migration, and commercial and sport fishing. Studies conducted by DTAC member agencies in cooperation with federal and state fish and wildlife agencies have concentrated efforts on improving conditions in the tributaries to the Bay-Delta Estuary. These studies have also focused on conditions outside the individual DTAC agency boundaries that affect the salmon fishery. Of importance to the State Board is the fact that numerous studies are currently underway to resolve the fishery resource issues in the upstream areas.

Sacramento River Basin

The testimony of Steven P. Cramer to the State Board on July 9, 1992 on behalf of twenty Sacramento Valley and San Joaquin agencies showed that Delta exports and ocean harvest rates have impacted the Chinook salmon resources of the Sacramento River. Among the findings testified by Cramer were:

- 1) The annual variation in historic Chinook salmon abundance is unrelated to water diversions upstream of the Delta. The amounts of water diverted and the timing of these diversions has changed little since before the documented decline of the Bay-Delta’s fish and wildlife resources.
- 2) The key factor that influences Sacramento River Chinook salmon survival is temperature, not flow.
- 3) Ocean harvest rates have exceeded the rates that naturally-produced stocks can withstand.

- 4) The combination of drought and expanded water exports has altered the salinity patterns in the Delta.
- 5) Predation may be a significant cause of juvenile Chinook salmon losses.

San Joaquin River Basin

On the Tuolumne River, the Modesto Irrigation District and Turlock Irrigation District (MID-TID) retained EA Science, Engineering & Technology (EA) to conduct studies required under their FERC license for the New Don Pedro project. The studies have been previously submitted as Exhibits WRINT-MID/TID 14, WRINT-MID/TID 15-1 to 15-28, and WRINT-MID/TID 33. In the words of Dr. Peter Moyle, the Tuolumne River is "...the best understood reach of regulated river in California in terms of the relationship of its physical and biological characteristics to production of Chinook salmon" (WRINT-MID/TID 35, p. 1).

EA developed models of the San Joaquin River and Tuolumne River salmon population for the purpose of identifying the factors that have influenced the population and for the purpose of predicting the effects which particular management actions are likely to have on the Tuolumne River salmon population.

The factors which were evaluated include: (1) the Delta export pumps; (2) the abundance of predators; (3) spawning, rearing, and migration flows; (4) water temperature; (5) quality and availability of spawning gravel; (6) food supply; and (7) ocean harvest.

EA found that the two primary contributors to the mortality of Tuolumne River salmon smolts are: (1) the Delta export pumps, which appear to be killing 35 to 44 percent of all juveniles and 55 to 67 percent of all yearlings emigrating down the San Joaquin River; and (2) predation in the lower Tuolumne River caused by introduced species of fish (see WRINT-MID/TID 22).

What effect do upstream water projects, other than the CVP and SWP, have on the fish and wildlife resources of the Bay-Delta Estuary?

DTAC takes exception to the characterization of this issue as expressed in the Notice of Public Workshop. The DTAC members are not aware of any evidence linking their beneficial use of water with the decline of Bay-Delta resources that has occurred since the mid-1960's. The annual diversions by DTAC members have remained relatively constant over the last 30 years. The evidence indicates that these historical diversions did not adversely affect Bay-Delta fish and wildlife populations. The concerns of the state and federal regulatory agencies over the decline of the Bay-Delta resources are a direct result of the SWP and CVP operations in the Delta.

The Export Problem

The question regarding the effects of upstream projects suggests a comparison between the impacts of the export projects and the impacts of upstream projects. The greatest change in *water development conditions* affecting the estuary since the mid-1960's has been the increase in Delta exports and related changes in export project reservoir operations and flow regulation. CVP and SWP exports have impacted the biological resources of the estuary by changing the volume of water and the direction of flow in Delta channels, by directly entraining fish at the project export pumps, and by contributing to an overall reduction in Delta outflow. Despite the obvious effects of exports on Delta hydrology and aquatic resources, there continues to be an unbalanced emphasis placed on salinity/outflow relationships. The result of this kind of "habitat-based" approach is that it fails to come to grips with an essential element of the habitat, namely the overwhelming impact of the CVP and SWP export pumps.

The linkage between Delta exports and the 2 part per thousand isohaline in Suisun Bay is acknowledged in EPA's proposed rule for water quality standards for the Bay-Delta Estuary: "Dr. Peter Moyle testified to the State Board that nursery habitat (represented by areas of low salinity) in Suisun Bay is now more important than it was historically due to the high risks of entrainment faced by fishes in the Delta." (59 Fed. Reg. 816.) In other words, under pre-project conditions and probably under conditions of limited export pumping, the Delta itself provided a valuable nursery area. Moyle and the co-authors of a 1992 paper on Delta smelt made a similar point when they wrote:

Increased diversion of fresh water from the estuary has altered both the location of the mixing zone and the flow patterns through the Delta during much of the year.... During the months when Delta smelt are spawning, the changed flow patterns presumably lead to greater entrainment of spawning adults and newly hatched larvae into water diversions. The combined effects of habitat constriction and fish entrainment provide the most likely explanation of the declines in abundance. (WRINT-USFWS 18, at p. 75.)

Even if outflows and salinity conditions had not changed since the historic reference period used by EPA, increased CVP and SWP exports since that time still would have caused the recent declines in species like striped bass or Delta smelt that frequent western Delta waters influenced by the pumps. If the goal is to protect estuarine resources—as opposed to protecting estuarine salinity—then the protective criteria must focus on the primary factors affecting those resources, i.e., entrainment and reverse flows caused by export pumping.

Although EPA's proposed estuarine habitat standard ignores exports, the agency proposes to rely on salmon smolt survival models that are in large part export-driven. If the fate of salmon migrating through the Delta is linked to export pumping, then "estuarine habitat" protection should directly address the impact of

export pumping. All the participants at the SWRCB's April 26 workshop urged the State Board to take an "ecosystem" approach to the Bay-Delta rather than a fragmented, species-by-species approach. DTAC also recommends that the State Board develop a unified and comprehensive approach to estuarine protection, rather than one that compartmentalizes protected uses and selectively ignores factors that contribute to the decline of many aquatic resources. Changes in water quality conditions are only one factor, and not the most important factor, causing the decline of aquatic resources in the Delta.

Obligations of the Export Projects

Area of Origin Laws

The area of origin laws were designed to prevent the CVP and the SWP from taking water needed in the area of origin for delivery to export customers; that is, they provide protection from the direct impacts of the export projects. Additional upstream water necessary to overcome the impacts of Delta exports must be considered as part of the export projects' "overhead" and necessary to support and sustain the export of water from the Delta.

The protection accorded areas of origin limits the right to export to water-deficient areas to water that is surplus to the needs of the area of origin. Furthermore, protected needs of the areas of origin include beneficial uses as well as any water needed by public trust resources. DTAC firmly believes that water required for existing beneficial uses and for public trust resources upstream of the Delta, as well as the water required for salinity control in the Delta, is not surplus to the needs of the areas of origin and may not be exported. Because water exporters are limited to surplus water, additional water needed to protect Bay-Delta resources must be obtained by reducing exports or providing new sources of water. To do otherwise would completely gut the protections provided by the Legislature in the area of origin statutes.

Obligations Based on Project Authorizations

One of the most important original purposes of the CVP, and later the SWP, was the protection of the Delta against salinity intrusion. Delta protection was an underlying part of the project design and authorization, and has been a key consideration in the operation of the CVP and SWP. Allocation of responsibility for water quality to protect Delta uses should take into consideration the fact that one of the primary purposes of the CVP and SWP was Delta water quality protection from salinity intrusion.

Beneficial Effects of DTAC Actions

DTAC would like to take this opportunity to mention the beneficial aspects of the upstream projects. The issues posed by the State Board emphasize the negative impacts that water development has had on Bay-Delta fish and wildlife

resources without recognizing that significant improvements to upstream public trust resources have been made.

Water from reservoirs operated by DTAC member agencies provides recreation and streamflow enhancement, especially in the summer and fall months. Water applied to crops grown in districts served by the DTAC member agencies frequently provides valuable waterfowl and other wildlife habitat during different times of the year. DTAC members are cooperating with state and federal resource agencies and others to improve conditions in upstream areas through such projects as streambed restoration, spawning riffle improvements, stream-side revegetation, and the coordination of spring pulse flows on the San Joaquin River. Any allocation of responsibility to meet water quality objectives must also recognize and credit the significant benefits provided by the upstream projects.

Attachment 1

DELTA TRIBUTARY AGENCIES COMMITTEE

1. Amador County Water Agency
2. Anderson-Cottonwood Irrigation District
3. Biggs-West Gridley Water District
4. Browns Valley Irrigation District
5. Butte Water District
6. Calaveras County Water District
7. Central California Irrigation District
8. Columbia Canal Water Company
9. Cordua Irrigation District
10. El Dorado County Water Agency
11. El Dorado Irrigation District
12. Firebaugh Canal Water District
13. Glenn-Colusa Irrigation District
14. Merced Irrigation District
15. Modesto Irrigation District
16. Nevada Irrigation District
17. Oakdale Irrigation District
18. Oroville-Wyandotte Irrigation District
19. Placer County Water Agency
20. Ramirez Water District
21. Richvale Irrigation District
22. San Luis Canal Company
23. South San Joaquin Irrigation District
24. South Sutter Water District
25. Sutter Extension Water District
26. Turlock Irrigation District
27. Western Canal Water District
28. Yolo County Flood Control and Water Conservation District
29. Yuba County Water Agency
30. Woodbridge Irrigation District